

**LISTING OF CLAIMS**

1. (Previously presented) A method comprising:

transmitting first digital messages to an analysis tool from a monitoring circuit integrated with a microprocessor, the first digital messages being representative of first specific events which depend on execution of an instruction sequence by the microprocessor;

detecting, with a request circuit, at least one second specific event independent from the execution of the instruction sequence by the microprocessor;

transmitting to the monitoring circuit, when the at least one second specific event is detected, a characteristic data signal associated with said at least one second specific event;

storing the characteristic data signal in the monitoring circuit, and, if resource management conditions are fulfilled, transmitting an acknowledgement signal to the request circuit;

transmitting at least one second digital message representative of the stored characteristic data signal to the analysis tool; and

processing the first digital messages and the at least one second digital message via the analysis tool to analyze operation of the microprocessor, including determining the instruction sequence executed by the microprocessor, and the at least one second specific event.

2. (Previously presented) The method of claim 1, in which the resource management conditions are fulfilled when the monitoring circuit is not transmitting the first digital messages representative of the first specific events.

3. (Previously presented) The method of claim 1, in which the at least one second digital message representative of the stored characteristic data signal comprises an identifier and the characteristic data signal.

4. (Previously presented) The method of claim 1, in which the characteristic data signal corresponds to the values on input terminals of the microprocessor.

5. (Previously presented) An apparatus, comprising:

a microprocessor;  
a memory integrated with the microprocessor;  
an analysis tool;

a monitoring circuit for transmitting first digital messages to the analysis tool, the first digital messages being representative of first specific events which depend on the execution of an instruction sequence by the microprocessor; and

a request circuit for detecting at least one second specific event independent from the execution of the instruction sequence by the microprocessor, the request circuit transmitting to the monitoring circuit, when the at least one second specific event is detected, a request signal and a characteristic data signal associated with said at least one second specific event,

wherein the monitoring circuit stores the characteristic data signal, transmits to the request circuit an acknowledgement signal when the characteristic data signal is stored, and transmits to the analysis tool at least one second digital message representative of said stored characteristic data signal, and

wherein the analysis tool processes the first digital messages and the at least one second digital message to analyze operation of the microprocessor, including determining the instruction sequence executed by the microprocessor, and the at least one second specific event.

6. (Previously presented) The apparatus of claim 5, in which the request circuit, the monitoring circuit, and the microprocessor are integrated in a same chip.

7. (Previously presented) The apparatus of claim 5, in which the request circuit is connected to input terminals of the microprocessor.